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UNITED STATES DEPARTMENT OF AGRICULTURE  
FOREST SERVICE



MONTHLY REPORT  
OFFICES OF FOREST EXPERIMENT STATIONS AND DENDROLOGY

JUL 1924





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July, 1924

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FOREST EXPERIMENT STATIONS  
Washington

R. D. Forbes, of the Southern Forest Experiment Station, was in Washington from the end of June until shortly after the fifteenth of the month going over plans for the development of the Southern Experiment Station. During the time that Forbes was here serious consideration was given to the personnel for the Southern Station as some little difficulty is being experienced in finding the right kind of men for the work. In addition to personnel, the enlarged program of the Station was considered and plans made for initiating field work when the season in the South opens up, which will be about the first of September. Much of the new equipment for the station was ordered and arrangements made to complete the needs of the South in this respect as soon as possible.

Mr. Shepard spent the month at the New England Station getting a first-hand knowledge of the work now under way.

Towards the end of the month Frothingham visited Washington for two days in connection with the oak study upon which he is engaged. He took advantage of his visit to accompany the Allegheny Section of the Society of American Foresters on their trip to the Eastern Shore of Maryland.

Korstian, of the Appalachian Station, also visited Washington en route to Asheville from New England, where he had been working on the chestnut replacement study. He was accompanied by Paul Wentworth, a University of Pennsylvania student.

Arrangements were made with the Bureau of Soils for cooperative work at the Priest River Station. Mr. Lapham and party will be able to visit the Priest River Experimental Forest this autumn and make a fairly complete soil map for the area. Arrangements were also made for cooperation with the Weather Bureau in New England for the fire prediction study. The work will be handled from three places - Boston, New Haven, and either Syracuse or Ithaca, N. Y.



During the early part of the month a number of lists of equipment, for which they had no further need, were secured from the Veterans' Bureau. Requests were made for much of this material to be furnished the eastern experiment stations. The equipment on these lists varied from a tin garage to a ruling pen.

The bulk of the time of the Section of Forest Measurements has been spent on the southern pine growth study, rechecking some of the figures in an endeavor to eliminate the questionable data that have been included. Mr. Geo. B. Shivery, Forest Assistant at the Southern Station, has been in Washington for the past month working on the growth study. Considerable time also was spent on the regional volume table for the western yellow pine.

During the month the new system of machine tabulation made its debut in the Washington office and bids fair to be a most desirable and useful member. The punching machines have been clicking the month through perforating cards with D.B.H's, total heights, volumes, etc., to be used in the compilation of the western yellow pine site volume table. The longleaf pine yield data has taken its place in the punch card filing system, with the other southern pines soon to follow. The sorting machine arrived the latter part of the month and by the fifteenth of August the tabulating machine will see its initiation. Henceforth in working plans for statistical compilations let us think in terms of perforations. It is much easier.

During the absence of Miss Stockbridge, Miss Meynes is acting as Librarian for the Service.

The Annual Program of Work for 1924 was completed during July and is being sent to the Department for mimeographing.

#### THE EDITOR'S OFFICE

#### Slinging the English

There has been much temptation of late to discourse on "showy writing," on circumlocutions and rhetorical perambulations, on dictionary Roman candles, on "slinging the English." The temptation will be resisted, and for an excellent reason. That is, that someone else has already written on this subject so well that attempts at improvement would be folly. For the benefit of those who do not have "Suggestions to Authors" by Editor George McLane Wood of the Geological Survey, we quote in part:

Some members of the Geological Survey never go anywhere - they invariably proceed. Neither do they begin work; they inaugurate or initiate it. Nor do they get or obtain information; they secure it. If the area in which they are working is not large they would call it, not "small," but limited or restricted. If they work in cooperation with State geologists the work is not done; it is conducted. They forget



their naturally simple and easy ways of speech when they sit down to write a Government report, the change in their mode of expression being similar to that wrought by love in a young man as described by Benedick in "Much Ado About Nothing":

He was wont to speak plain and to the purpose, like an honest man and a soldier, but now he is turned orthographer; his words are a very fantastical banquet, just like so many strange dishes.

The writer who is thus under the spell of authorship will write of "superficial circulation," meaning surface water, or of the "vegetational aspect of the vicinity," or of "the ultimate nonanalyzed data of all happenings that may be apprehended"; or he may report that "the high-pressure area which collects over the Great Plains here accelerates the prevalence of westerly winds."

A teacher of English writes:

Showy language, like showy dress, is in bad taste. The essence of artistic language, as of everything artistic, is not abundant ornament but appropriateness. Straining for high-sounding expressions to replace plain English makes a style weak and crude.

"Inaugurate" and "inauguration" may be reserved for use in Washington on March 4 and for other appropriate occasions; "initiate" is a good word to employ in connection with ceremonies in secret societies, for example, or, judiciously, in connection with some other things; and "secure" may properly be wedded to "security," if only to encourage the use of good English, particularly as the word is not needed in the sense of get, obtain, procure, assure, or insure. Even the dictionaries are disposed to proscribe the use of "limited" and "restricted" for "scant" or "small." The better critics of English, from whom the dictionary makers occasionally take advice, have noted the same fault. One of them, W. B. Hodgson, writes:

"His pecuniary circumstances were likely to be, for some years at least, very limited." This phrase, though not perhaps commendable, might be defended, the notion conveyed by it being the exact reverse of boundless or unlimited wealth. But in the two following passages limited is unquestionably wrong:

"The cost of the volume was formerly five shillings; it is now published at the limited (low or reduced) price of one shilling." "If we may find an opinion on a limited (slight) acquaintance with the writings of Tieck." An unlimited acquaintance would be strange!

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These are geological specimens, to be sure, but the interesting collection of silvical specimens which the Editor is making and will one day exhibit in all its naivete is as like as two peas!

*Pacific Northwest Forest Experiment Station*

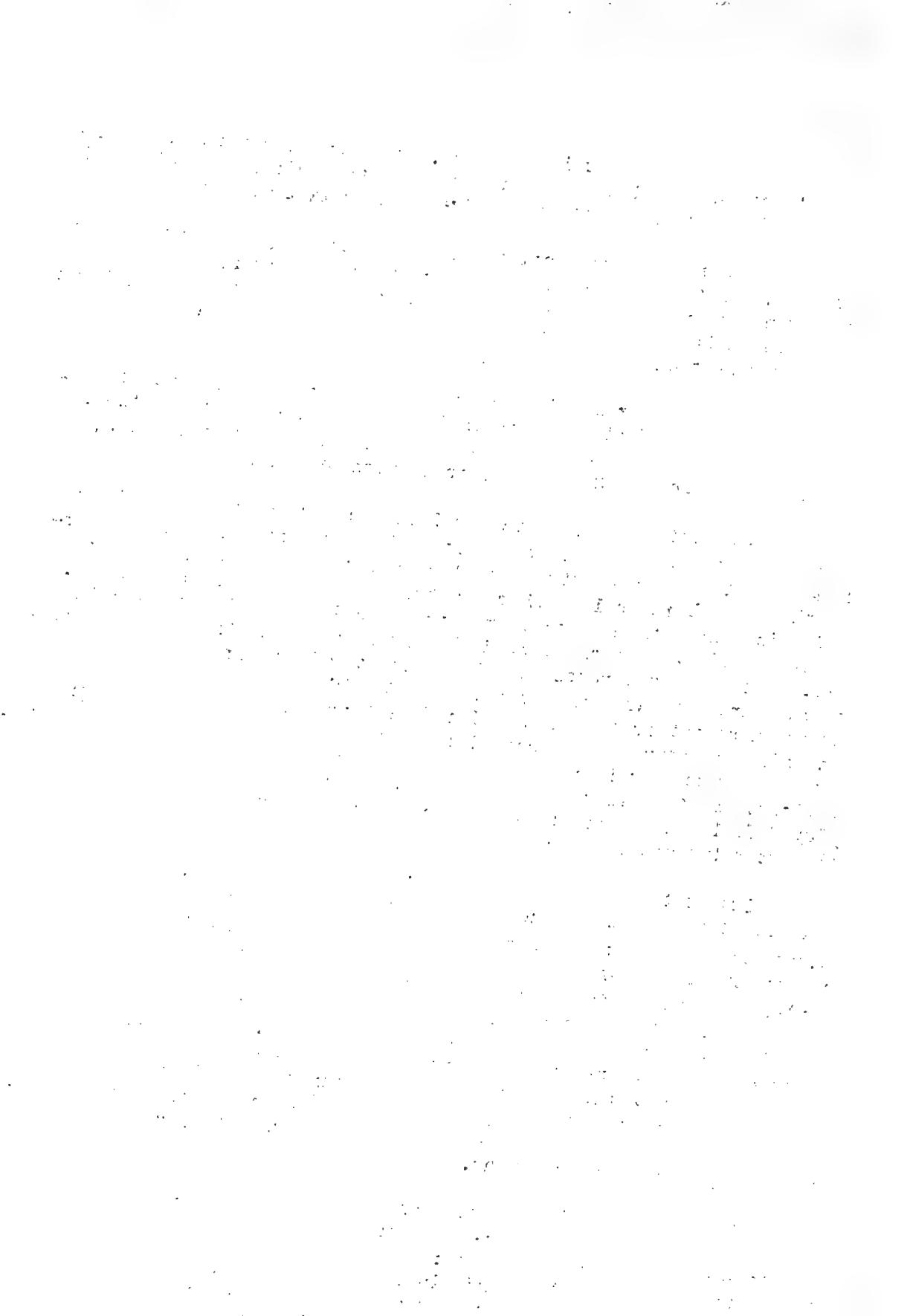
Herewith the Pacific Northwest Forest Experiment Station makes its first appearance in this report in the growing family of experiment stations. Unlike some of the other stations, it has burst into being half grown, for it is a reincarnation of the 12-year-old Wind River Station.

The work underway at Wind River is absorbed by the new organization and the projects are continuing there without interruption. Wind River will continue to be an important focus for field work, particularly fire studies and reforestation projects.

This month Isaac, besides helping on fire studies, has been familiarizing himself with the past work there and doing much in arranging files and property. The last two weeks of the month he was in the East, being called there by the sudden death of his brother. While in Minnesota he reports making a profitable call at the Lake States Station. Simson devoted the entire month to Fire Weather Studies. The Weather reports have been received by radio in code each morning and a weather map prepared. "STATIC" observations are made at frequent intervals and correlated with the trend of the weather, in order to arrive at the correlation of "static" and impending weather. A weather prophesy is made each day and advice sent to local forest officers and the District office, as occasion demands. A recently employed field assistant at Wind River has made a great improvement in the Arboretum and its records.

The Weather Bureau has recently assigned two of its technicians, Messrs. Alexander and Dague, to fire weather work; the former is assigned to the Washington section with headquarters in Seattle, the latter to Oregon at Portland. Their expenses are to be paid by the forest protective associations who were instrumental in getting this cooperative work underway. Both men have visited Wind River twice and also been in conference with the Director in Portland. Their first work is instructing the cooperative observers and assisting in the installation of their instruments. Reports will be secured daily from a number of key stations in both States (all Forest Service or Association observers), to help in the fire weather forecasts, these to cover psychrometer readings and wind observations.

Aside from the Wind River work, the major project of the season is a yield study of pure even-aged Douglas fir. A party of three, Junior Forester McArdle and two forest school graduate field assistants, went into the field July 4 and since then have taken 78 plots (mostly acres) in 10 different tracts, besides 60 chains of empirical strips on some of these tracts. The plan is to get a large series of plots - to supplement those taken in 1909 and 1911 - in age classes from 40 to 140 years old on every variety of soil and climatic region of western Oregon and Washington. Many interesting things are being encountered, as, for example, a 43-year-old stand in which a portable mill is now making a profitable cutting of ties and side lumber.



The Director has spent some time with the yield study crew, a little at Wind River, and has been interviewing a number of persons to acquaint them with the new forest research work being launched and to get their suggestions on specific matters. He also paid a visit to the new nursery of one of the large paper companies where that company hopes to raise a half million Sitka spruce annually. Near-by one of the plantations of black cottonwood made by that company twenty-one years ago was visited. It is splendidly successful and would make fine pulpwood now, except that the company no longer uses any cottonwood.

#### APPALACHIAN FOREST EXPERIMENT STATION

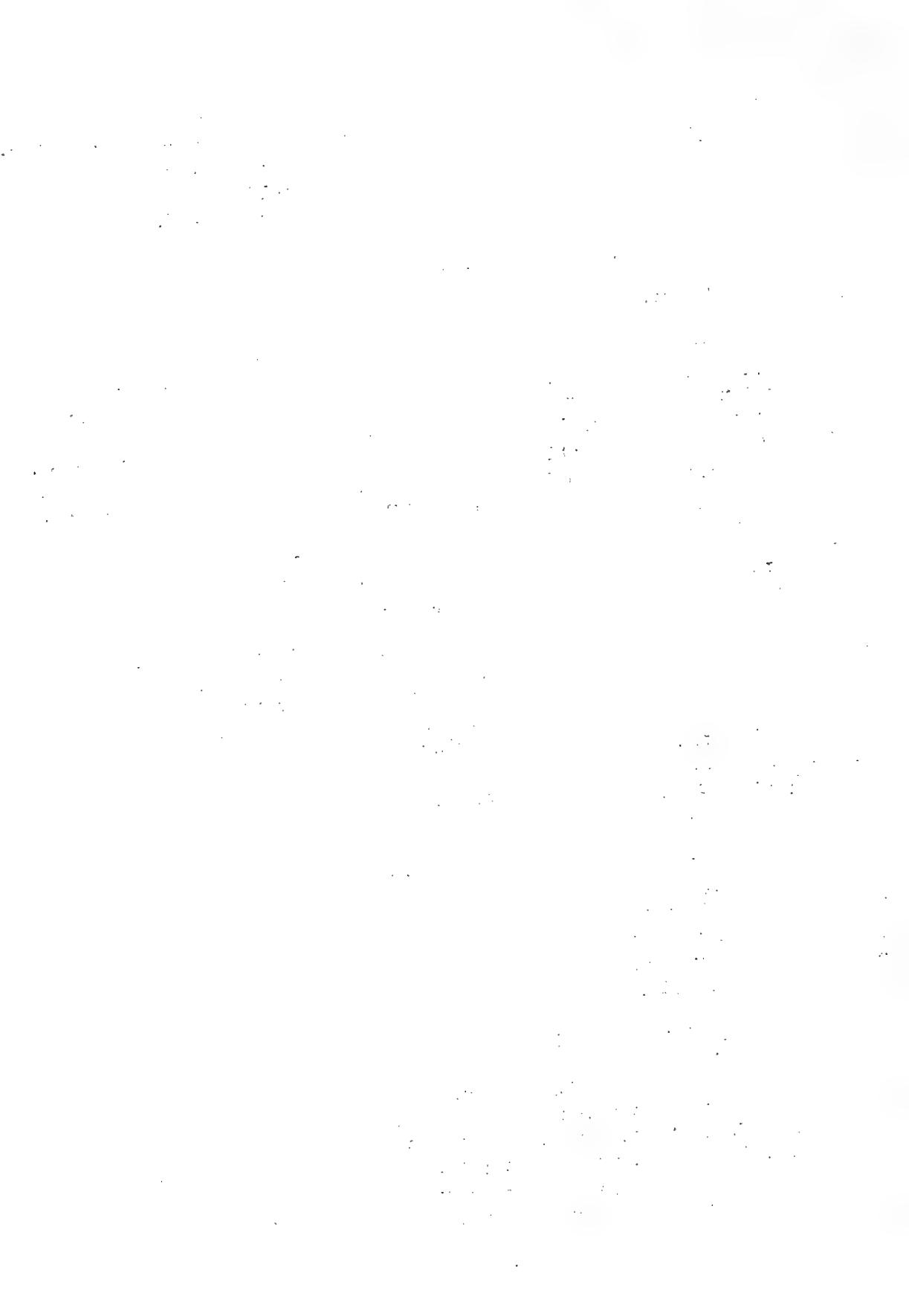
##### Chestnut Replacement (M-3)

Field work on the cooperative study of natural replacement of blight-killed chestnut, directed by C. F. Korstian, was brought to a close in Connecticut, New Jersey, and Pennsylvania, and was continued in the Shenandoah National Forest in Virginia. P. W. Stickel, for the Northeastern Station, participated in Connecticut, where splendid cooperation was received from Professor Hawley, of the Yale School of Forestry, and Mr. Filley, of the Connecticut Agricultural Experiment Station. In northern New Jersey Korstian was joined by Field Assistant Paul M. Wentworth, who was employed by the Station last year. Associate State Forester W. M. Baker of New Jersey cooperated by furnishing a man to assist in the field work in that State.

Four days were spent by Korstian in Pennsylvania with J. S. Illick. Trips were made to central and southern Pennsylvania mainly to inspect permanent sample plots which were established about the time the blight began operations in earnest in these localities. The Pennsylvania men have kept records on these plots during the conversion of the chestnut - oak stands to stands of essentially pure oak. The plots are therefore particularly valuable in connection with the present study, and plans were discussed for the publication by the State of a report on them.

The work in Virginia was on the Potomac Division of the ~~Shenandoah~~ National Forest, where the blight, though actively killing chestnut, has not yet resulted in the advanced stage of replacement noticeable farther north. Conditions here suggested the establishment of permanent sample plots, for observation of the progress of replacement and of the effect of death of chestnut upon the growth of other species in the stand.

The field data secured in this study indicate that the natural replacement of the chestnut is assured in practically all cases. The smaller blanks left in the forest through the death of the chestnut are being filled by the extension of the crowns of adjacent trees, principally oaks. These trees have shown an increased growth nearly twice as great as for the same length of time before the death of the chestnut. In southern New England the larger openings are for the most part being filled by seedlings and sprouts of valuable oaks, white ash and hickory.



In northern New Jersey pine also is coming in naturally in the larger openings. Of all the different species replacing chestnut, the chestnut oak is one of the most abundant and widely distributed, from Connecticut to North Carolina.

#### Methods of Cutting - Hardwoods (Mc-1)

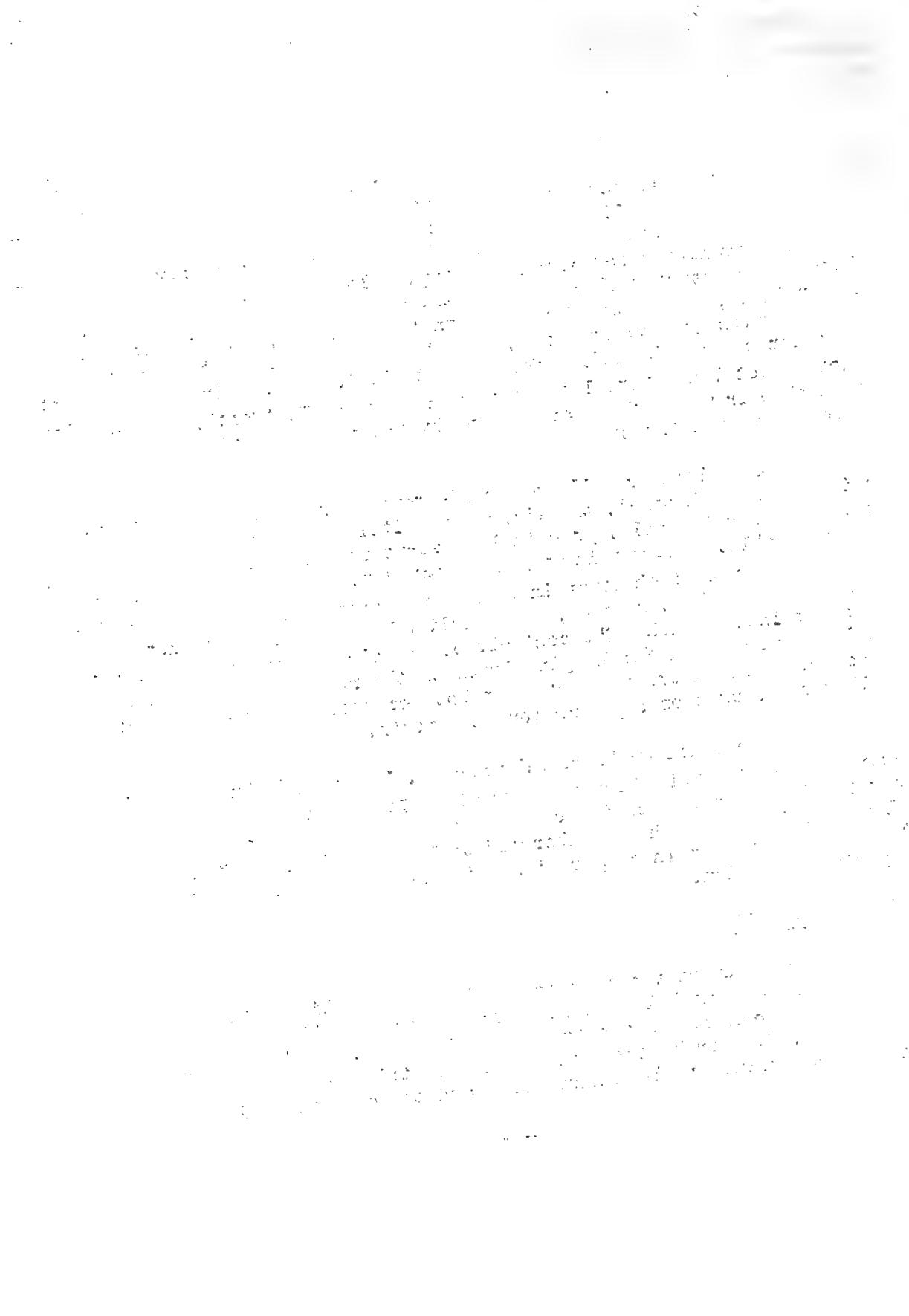
An extension of the study of hardwood reproduction and growth after cutting to one of the National Forests in the northern part of the Station's territory has been contemplated for some time, in connection with the establishment of a northern working center. The chestnut replacement study on the Shenandoah National Forest revealed favorable opportunities for permanent sample plots there, to function for both the chestnut replacement and the methods of cutting projects. Accordingly, after Korstian's return to Asheville, Frothingham, in company with Supervisor Marsh, selected three areas on the Potomac Division of the Shenandoah for the establishment of pairs of permanent plots. Plot lines were later run by Haasis and Wentworth, and one plot of each pair was marked for cutting by the representatives of the Station and of the Forest.

These plots are all in second-growth hardwoods. Two contain much dying or dead chestnut, the third very little. Under the very close utilization obtainable, practically everything down to  $1\frac{1}{2}$  inch diameter is utilizable. The marking was restricted to the trees to be left; due to the presence of chestnut in small pure groups and of defective large trees which will be removed, the result of the marking will not be an evenly thinned stand. The controls of the plots containing chestnut will afford a means for keeping track of the replacement by other species, while interior quadrats in both control and cut-over plots will give figures on reproduction and growth.

The plots are quite readily accessible from Edinburg, Liberty Furnace, and Columbia Furnace, Virginia. It is anticipated that this region will become a working center for the station, perhaps including also experiments in the neighborhood of Wardensville, W. Va., which may later be undertaken in cooperation with the West Virginia Agricultural Experiment Station.

#### Oak Study (TS-12)

McCarthy spent ten days on a trip by automobile into northern Georgia and the Nantahala National Forest, principally in search of second-growth oak stands for the oak yield study. He left again on the 27th with L. H. Reineke for a more extended trip into Tennessee, to initiate oak volume table measurements and to continue yield table work.



Active cooperation in locating oak stands suitable for the yield study has been given by State Forester Jones of Virginia. A desire to participate in the study has also been expressed by State Foresters Besley of Maryland and Secrest of Ohio. The abundance of old "coalings" in Virginia and Maryland, with the consequent development of even-aged second-growth timber, suggest that these States can furnish much material for the oak yield study. The second-growth hardwood stands of southern Ohio also afford good plot material.

#### Cooperative Nursery Experiments at Canton, N. C.

The station's seed beds in the Champion Fibre Company's nursery were examined by Korstian on July 28. The extremely wet weather during the early summer resulted in considerable loss from damping off. This was followed by a period of dry weather. The water system was not installed soon enough to prevent some drought injury. With the new water system in working order and an experienced nurseryman at the helm, the nursery is already taking on a rejuvenated appearance.

The fall-sown yellow poplar seed beds are still ahead of the beds sown in the spring with stratified and unstratified seed. The fall-sown bed showed about three times the number of seedlings as the spring sowing of seed which had been stratified over winter in sand. Seed which had not been stratified showed practically no germination. Delayed germination has been demonstrated in the case of last year's sowing of yellow poplar; more than twice as many seed germinated the second season as the first. The information at hand indicates that yellow poplar seed should be kept moist from the time it is collected until it germinates, and that this can be most conveniently accomplished by fall sowing.

#### Seed Spot Experiments with Yellow Poplar

In connection with his yellow poplar study (TS-375) McCarthy put in 100 yellow poplar seed spots near Willetts, N. C., in the spring of 1923. On examining these in July, 1924, he found an average of 14.3 seedlings per seed spot, no spot having less than 4 seedlings. About 95 per cent of this seed had held over during the growing season of 1923 and had germinated in the spring of 1924. This was probably due to the seed being excessively dry, but it demonstrates the vitality of yellow poplar seed and bears out the previous belief that poplar seeds may lie in the forest floor through one growing season before germinating.

#### Chestnut Blight Found in Georgia

On his trip to Georgia McCarthy located two new spot infections of chestnut blight, extending the known range of the blight still farther to the south. Ten miles south of Blairsville, Ga., and just



north of the Blue Ridge, two trees were found definitely infected and others bore evidence of the blight in the higher limbs. The other area of infection was north of Brasstown Bald Mountain, about five miles from Young Harris, Ga. In both instances the blight appeared to be developing rapidly. These infections are in a region which has a high percentage of chestnut, especially in the higher mountain slopes. A number of infections are to be found in North Carolina and Tennessee not far north of these.

#### General

L. H. Reineke, for several months a field assistant at the station, became a regular member of its staff on July 22. He reported direct from the Naval Air Service Training Camp at Norfolk, Va., where he was successful in securing his commission in the Reserve Corps.

Frothingham and Korstian paid brief visits to the Washington office while en route on field trips.

Frothingham's visit with State Forester Besley of Maryland was timed to take advantage of a two-day "inspection trip" by automobile through the loblolly pine section of the Eastern Shore of Maryland. This was the annual summer field meeting of the Alleghany Section, Society of American Foresters, and fifty foresters, chiefly from Pennsylvania, New Jersey, the District of Columbia, Maryland, and Virginia, made up the party. Plans for the trip had been carefully prepared by Besley, Cope and Pfeiffer, of the Maryland staff, to make good, visually, Maryland's printed claims for loblolly pine - and they were demonstrated "to the satisfaction of the most skeptical." One outstanding feature was the evident success of controlled burning in the establishment of loblolly pine reproduction under competition with hardwood undergrowth. Rapid growth of loblolly in plantations, development of stands following thinning, earnings from sale of thinnings and leaf litter, and small loss of seed trees from windthrow were other striking features of the trip.

R. D. Forbes and H. M. Curran, State Extension Specialist in Forestry for North Carolina, were visitors during the month. In company with Curran, Frothingham made a trip to the Swannanoa Test Farm of the North Carolina Agricultural Experiment Station in order to determine the availability for experimental and demonstrational purposes of the woodlands attached to the Farm.

Other July visitors included Mr. Miller Hamilton, of the Branch of Public Relations, Washington office, Mr. George L. Wood of the R.E. Wood Lumber Company of Baltimore, Md., and Mr. John W. Goodman, District Agent, North Carolina Agricultural Extension Work.



FREMONT EXPERIMENT STATION

July Activities

Bates returned from the Black Hills and Harney Forests July 2 and left almost immediately for the Medicine Bow, returning to the station on July 20. On both Forests the activities were the remeasurement of permanent sample plots and the initiation of the increment-borer studies of cut-over areas, to be carried on more extensively by the local officers.

Roeser joined Bates on the Medicine Bow for a couple of days to become familiar with the increment-borer study, after which Roeser inaugurated this work on the Uncompahgre and Cochetopa Forests, where he also established permanent plots (Mc-3) in spruce stands.

During the last 10 days of July Bates handled some of the routine work at the station in Roeser's absence. The main part of this was done by Robertson, however. Bates instituted a new system for determining soil moisture during very dry periods such as have occurred this summer. This will be described later when it has been given thorough trial.

August Plans

One of the most urgent improvements at the station is the re-building of the office roof which has been leaking hopelessly for some time, causing a great deal of annoyance and some property injury. This job will be undertaken at once.

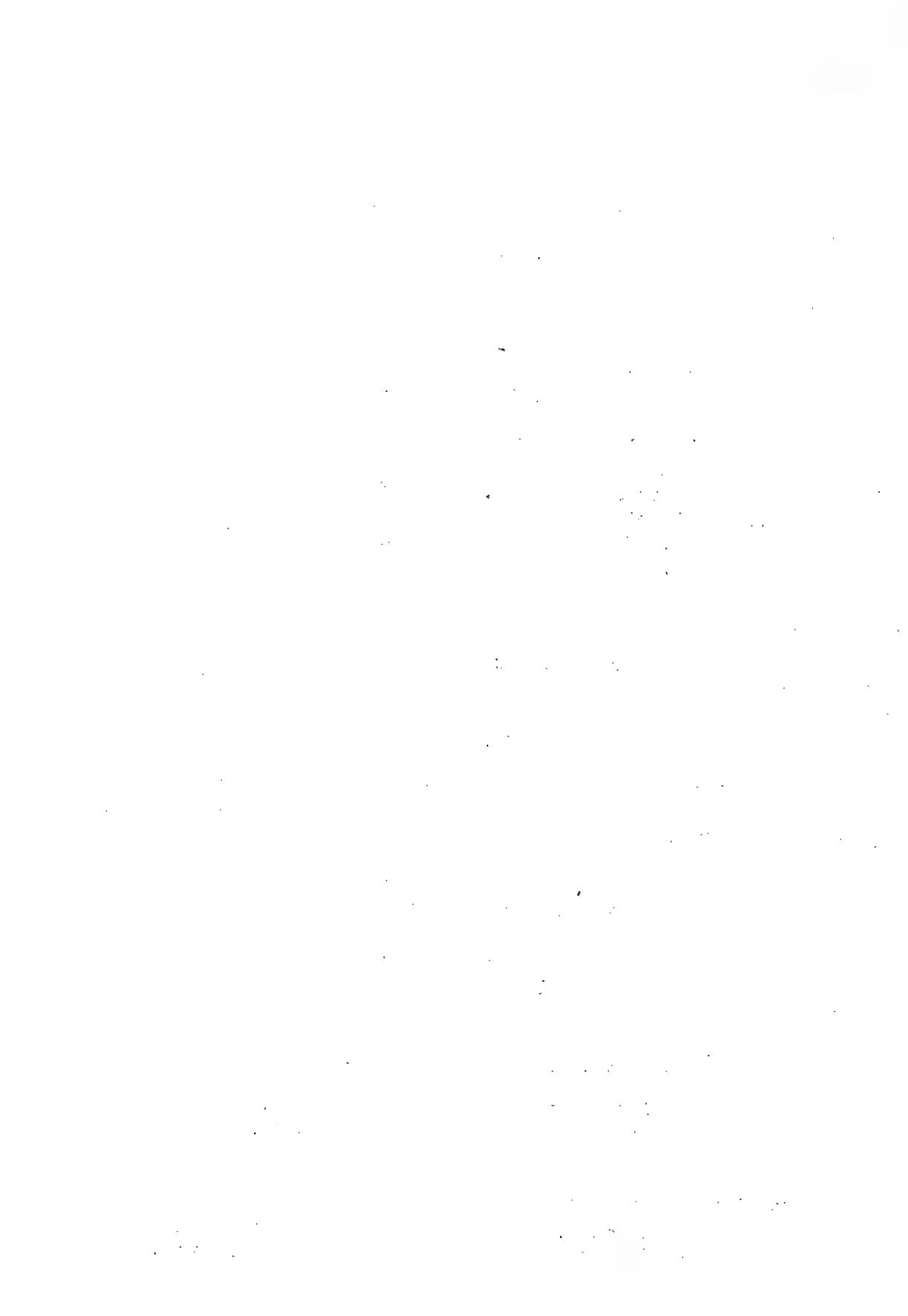
Roeser will return from the Cochetopa Forest August 4 and Bates will start immediately for the Leadville and Holy Cross Forests where permanent plots (Mc-5 and Mc-3, respectively) will be measured, and the increment-borer study initiated in each case. This will take till August 20 or somewhat later, after which Bates expects to join Mr. Clapp for an inspection of practically all the plots in the District.

The routine work at the station on T-1, T-2, T-5 and T-7 has been very heavy this season and will keep Roeser and Robertson pretty closely confined.

LAKE STATES FOREST EXPERIMENT STATION

July has been largely taken up with field work, Wackerman and Kittredge being away from the station the entire month.

The field measurements for the jack pine yield study in Wisconsin were completed during the first half of the month by Wackerman. The latter part of the month, assisted by a crew of three men, he has been engaged in securing empirical yield data on jack pine in southern Michigan.



During the month Kittredge has completed the examination of State plantations on most of the older State forests in lower Michigan. In this connection he writes: "The more I see, the more I am impressed by the large amount and high quality of the work which Schaaf has accomplished. It is a record which few foresters in this country have to their credit. It isn't on paper; you have to get out on these forests to see it, but it is here."

Considerable progress has also been made in the compilation and analysis of Minnesota forest fire statistics. Mitchell has given practically all of his time to this work during the month with the help of two assistants, paid since July 15 by the Minnesota State Forest Service. H. F. Maturen, who had been working with Mitchell on this project for some time, left July 16 to accept a position as assistant to the State Forester of Alabama. A trip was made by Mitchell during the month to Cloquet to check up the new hygrothermograph installed there. A little difficulty was experienced with it at first, but it now appears to be working very satisfactorily.

On July 1 and 2 Zon attended the meeting of the State Forestry Board at which Conzett was appointed for five years as State Forester.

During the month Zon completed the rough draft of the circular on "The Forest Resources of the World in Their Relation to the United States."

Zon was in northern Minnesota with P. O. Anderson of the State Forester's office to look over State and Forest Service timber sales for the purpose of working out a definite State timber sale policy that would be silviculturally sound and in harmony with the policy of the Forest Service.

On July 29 he attended a meeting of farmers held at Cloquet and the Cloquet Experiment Station for the purpose of interesting them in the practice of forestry on their lands. It was unique - "Farmers' Day" on a forest experiment station. The meeting was sponsored by the Cloquet Chamber of Commerce and the Cloquet Experiment Station. About 200 farmers attended the meeting. P. S. Lovejoy covered the meeting for the Country Gentleman.

A conference with the State Forester and members of his staff was held at the office of the Experiment Station early in the month, at which cooperation with the Experiment Station was agreed upon to the extent of paying the two men assisting Mitchell on the fire studies for a period of two months, in return for which Zon agreed to assist the State in working out marking rules and a timber sale policy.



As the result of the study made on forest planting and the report of the damage done by the snowshoe rabbit, J. F. Gould, Commissioner of the Game and Fish Department of the State of Minnesota, has decided to recommend to the legislature that the snowshoe rabbit be taken from the protected list. At present the snowshoe rabbit is protected in Minnesota and the open season on rabbits is from October 15 to March 1, only. He also submitted the matter to the Minnesota Game Protective League at its annual convention, held at Park Rapids on July 25, 26 and 27, in order to secure their endorsement of the proposed legislation.

Visitors to the station during the month: Dr. Julius V. Hofmann, P. S. Lovejoy, Leo A. Isaac of the Pacific Northwest Forest Experiment Station, and R. F. Luxford of the Forest Products Laboratory.

#### CLOQUET FOREST EXPERIMENT STATION

A large sign 3 x 8 ft., done in maroon and gold framed with a log frame has been hung under the archway at the station entrance. Small archways with maroon and gold signs have been erected at each of the nurseries and at the office building and at the picnic grounds.

Through the efforts of J. A. Stillwell, the foreman, who is also a game warden, ten cans of trout fry were secured for Otter Creek which flows through the station.

A thinning plot covering a half acre has been installed in a 27-year-old stand of jack pine. About 800 trees were removed from the half acre and 300 left standing. No volume computations have been made yet but about five cords of forewood will be realized. There will be three to four cords in the remaining stand. This stand of jack pine was beginning to stagnate and was very badly in need of thinning.

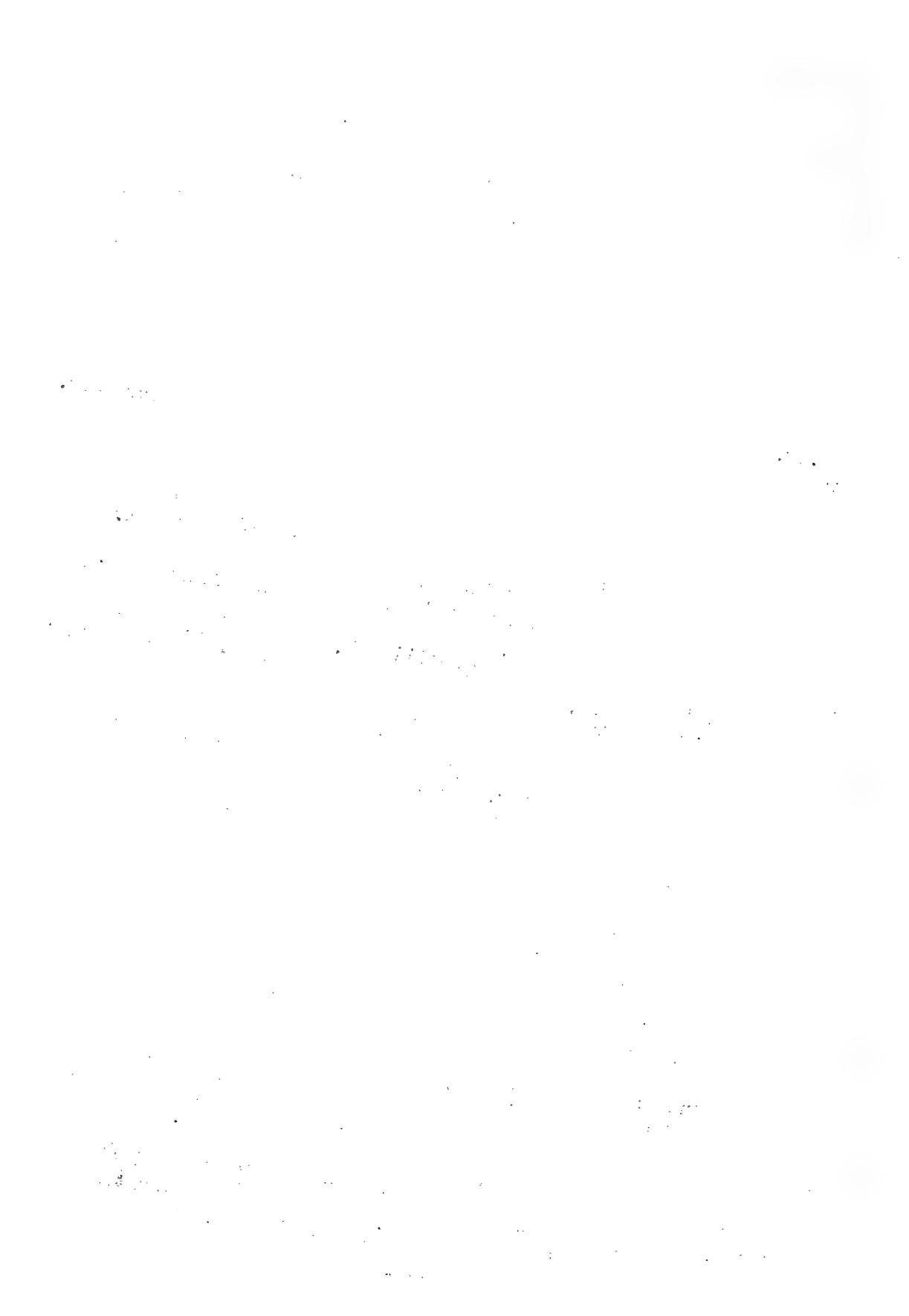
#### SOUTHERN FOREST EXPERIMENT STATION

##### General

The main decisions resulting from Mr. Forbes' Washington conference in July are as follows:

Personnel: The employment of three additional technical men (two besides Shivery) and an additional permanent clerk. No yearlong nontechnical men except as needed on naval stores work.

Headquarters: Single central headquarters, from which men will travel to field centers of work and elsewhere. Final location of headquarters to be decided on basis of Mr. Clapp's visit in September.



Field centers: Two or three new centers of work to be chosen only after thorough survey of territory. Every effort to use National Forests, even at some sacrifice of ideal choice.

Program: Confined entirely to pine types and present territory of the station, except for clean-up of tupelo growth study in office. Continuation of present lines of work, with particular emphasis on extensive surveys. Expansion of naval stores program left for later decision. Program to be presented hereafter on September 1st, later this year.

Advisory council: To be formed as soon as possible to pass on new program.

Mr. Hadley completed his field work at Bogalusa and McNeill and moved his official headquarters to New Orleans on July 4th. Both he and Mr. Hine remained in the New Orleans office continuously during the month working up field notes of the various projects under way at the Bogalusa and Urania centers of work.

Mr. W. R. Mattoon's longleaf pine Bulletin 1061 was given a critical review by Wyman, Hadley, and Hine and memoranda embodying their suggestions for changes and additions were prepared by each. Mr. Wyman's two years of experimental work in turpentine orcharding enabled him to contribute materially to the naval stores section of the bulletin. Mr. Hine found all growth figures for better land to be noticeably low as compared with values for Site I obtained in the southern pine growth study. Under forestation Hadley recommended early spring, about the time growth starts, to be the optimum time for direct seeding, rather than October or November, as advocated in the bulletin. Hadley's recommendation is based on studies of very extensive direct seeded areas at Bogalusa, which show direct seeding in the fall to be attended by excessive loss of seed by migratory birds, rodents (due to absence of other food), prolonged drought, and frost heave. Spring seeding evades most of these destructive agencies.

At the Starke Branch Station Mr. Wyman reviewed and prepared comments on Dr. Craighead's article on the "Relation Between Insect Depredations and Periods of Deficient Rainfall."

The Southern Pine Association evidenced considerable interest in the status of the Southern pine bark beetle situation by requesting material for publication in their periodical.

Mr. S. S. Sheip of Jerome H. Sheip, Inc., Mobile, Alabama, called again at the New Orleans office to discuss with us the growth and yield of tupelo gum, and very generously invited us to extend our study to the stands of tupelo on his holdings near Mobile.



## Protection

Fire. Using data collected from the Roberts plots at Urania as a basis Hine prepared an article on "Fire, Hogs, and Disease versus Longleaf Pine Seedlings." During the five-year period, 1920-24, the burned plot lost 62.9% of the seedlings, largely due to fire. On the unburned area the loss was almost as great, 58.3%, attributed to the work of a leaf blight disease, *Lophodermium pinastri*, and to competition. During this period new seedlings coming in on the burned area were unable to survive the fires. On the unburned area 780 seedlings from the 1920-21 seed crop have made a good start. The effect of annual burning is more clearly reflected by the growth of the seedlings on the two areas. Seedlings on the unburned area have grown in height three times as fast as those on the burned area. The protected area has 1044 seedlings over 1" d.b.h. as compared with 180 on the burned plot.

Mr. Hine began work on the preparation of his report of establishment for loblolly pine season of burning plots at Urania.

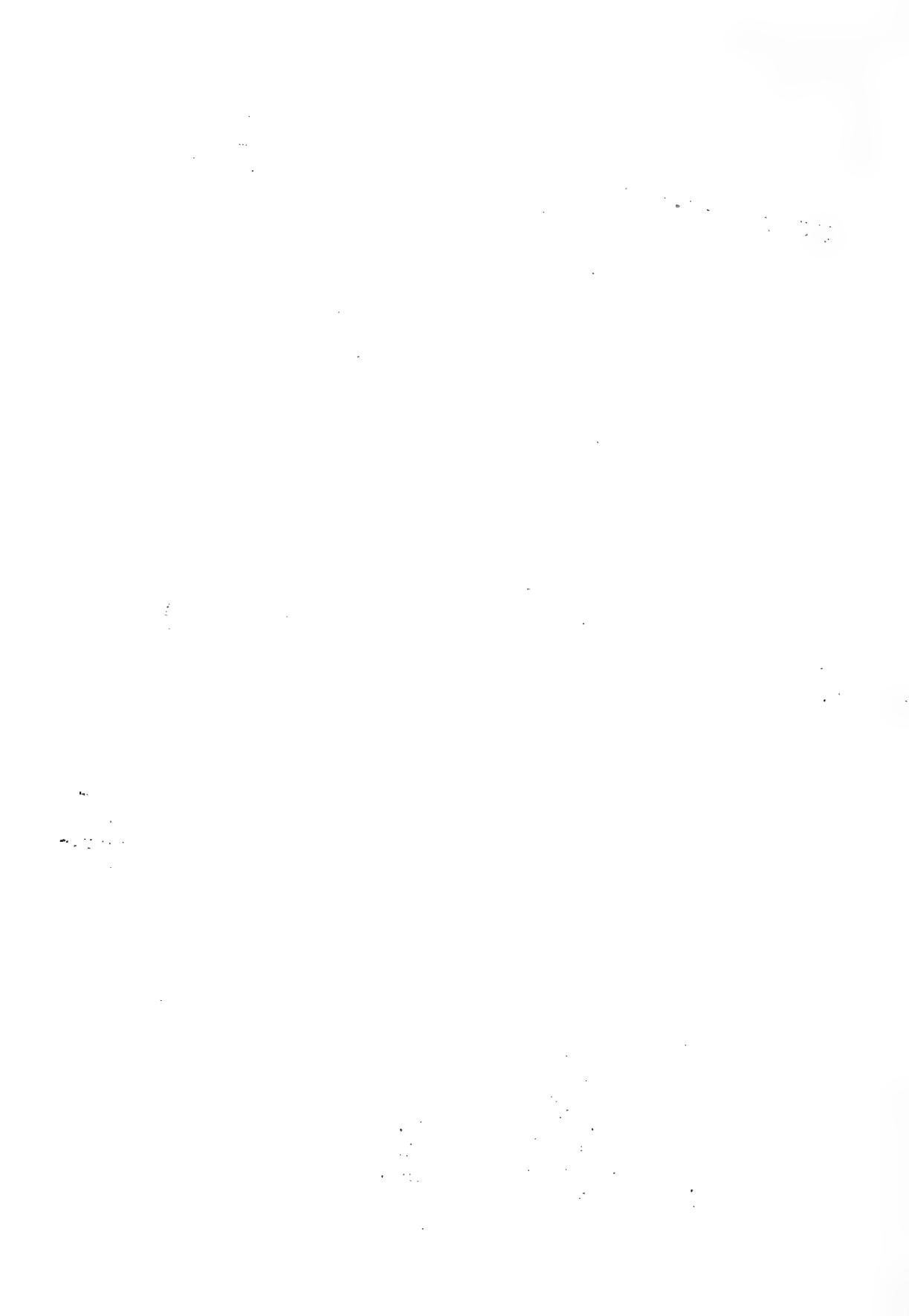
Grazing. Hadley spent a couple of weeks working up field notes and maps for his grazing study at McNeill. Tables for each portion and check plot were prepared to show distribution and character of seedlings, area of each soil type, reproduction type and hardwoods. Quadrat maps were inked in preparatory to tracing; and separate sheets for each quadrat were typed, showing position of site, reproduction tally, and a tally of plant population by species and per cent.

## Management

The only attention given Management during the month was Hine's final revision of his report on the "Establishment of Natural Reproduction Plots in Loblolly and Shortleaf Pines and Mixed Hardwoods, Urania, La." A careful check of the original data and the added familiarity with the area made it possible for him to clear up some points in the study and to strengthen the work as a whole.

## Naval Stores

With the extension of the naval stores investigative work in view Wyman visited several naval stores operations in northeast Florida and southwest Georgia and found many desirable stands of timber and willing cooperators. Mr. Wyman attended several demonstrations of correct stilling methods conducted by Mr. Shingler of the Bureau of Chemistry at Starke, Graham, and Oliver Siding, for the purpose of demonstrating conservative methods of chipping.



At Starke Mr. Wyman supervised the current work of putting on streaks, dipping, and weighing. He checked the typed copy of his annual report on slash pine tests and sent field records of dipping used in the report to New Orleans for checking before they appear in his article. Mr. Hine checked these and found only minor and unimportant errors.

A popular article on narrow chipping, based on the above report, was prepared by Wyman and sent to New Orleans for review.

A set of chips from the slash pine tests were obtained for Miss Gerry.

#### NORTHEASTERN FOREST EXPERIMENT STATION

Westveld continued field work in New Hampshire on his study of spruce methods of cutting. Tentative plans were prepared for the laying out of some permanent sample plots in connection with this study on the Cherry Mountain timber sale on the White Mountain National Forest. Meyer continued to record temporary sample plots in various parts of Maine in connection with his spruce yield study. He has been rather more successful than last year in locating suitable plots, particularly in the older age classes. Empirical as well as normal plots are being taken in order to secure a comparison between the two and to get a reliable basis for converting normal into empirical figures.

Behre got into the field the first of the month and has been spending the entire time since in securing measurements in connection with his taper study. An interesting feature of the work is an attempt to develop a combined hypsometer and dendrometer which can be used in determining form quotient and form class.

Peirson and Beal spent practically the entire month at the Cupusitic storehouse of the Brown Company under Oquossoc, Maine, where they have continued field studies on spruce budworm and other insects. Careful checks indicate that the per cent of budworm-killed timber is practically the same whether based on the number or volume of dead trees.

Ward Shepard, from the Washington office, spent the entire month in the region. In company with Dana, he visited all of the field parties and participated in the work under way. A trip was also made to the Adirondacks and Catskills of New York State to become familiar with the conditions there, and to investigate possible sites for substations. No thoroughly satisfactory locations have yet been found. It is believed to be better to go somewhat slowly and be sure that we are right than to attempt to decide at once on locations which might later prove undesirable.



SOUTHWESTERN FOREST EXPERIMENT STATION

Krauch and Osborn have spent the entire month remeasuring sample plots and examining planting areas on the Carson and Santa Fe. A number of sample plots established by administrative men 10 years ago have been examined. Most of these prove to be of little value because the trees were tagged in advance of cutting. Many of the trees designated as "left" were removed or damaged, and others have no tags. This experience again justifies the present policy of limiting the amount of sample plot work to that which can be given close supervision by the experiment station.

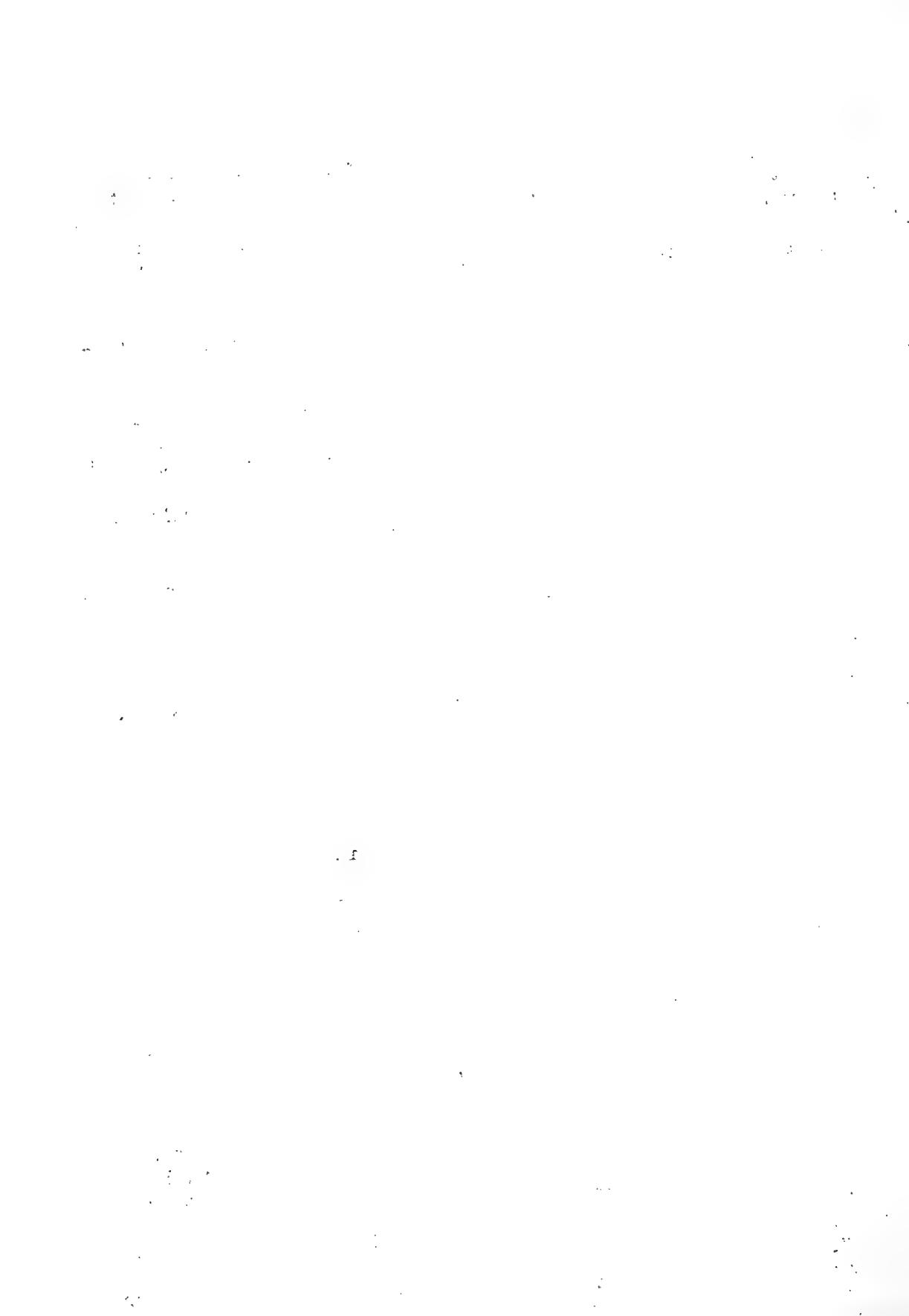
Pearson has made a further study of the thinning problem, establishing several small plots near the experiment station.

The summer rains have afforded a good opportunity for experimental brush burning. Summer burning is entirely feasible for fire lines; in fact, it gives a cleaner burn than when the ground is covered with snow. The best time to burn is in the evening on days when a shower has fallen in the afternoon. At such times the air is calm and the foliage of living trees is wet. Fire does not run in grass or litter under these conditions, but if no rain falls the next day the area should be patrolled. For areas other than fire lines, summer burning has two disadvantages; (1) the area requires watching for several days after the fire; and (2) damage to young growth is likely to be greater than in winter.

Dr. Walter P. Taylor of the Biological Survey is conducting experiments with captive porcupines which leave no doubt that "porcy" is guilty of all the charges filed against him in regard to damaging young pines. The following notes by Dr. Taylor constitute part of the evidence:

A single small porcupine (weight 8 pounds) in a cage gnawed off 34 square inches of bark in a single night. Another porcupine (weight 13.5 pounds) fenced into an area about 90 feet square, disposed of 196 square inches of bark in six days, an average of about 33 square inches per day. In this time the porcupine worked on two large trees and seventeen small ones, six of which he girdled. A third porcupine (weight 12 pounds) fenced into a slightly larger inclosure, was responsible for the removal of 300 square inches of bark in six days, an average of 50 square inches per day. In the process the animal worked on five black-jacks and 71 seedlings, of which latter 39, or more than half, were girdled and killed.

Among those who visited the station during the past month are: Dr. A. E. Douglass of the University of Arizona, noted for his studies of tree rings in relation to climate; Dr. Charles C. Adams, director of the Roosevelt Wild Life Experiment Station, New York State College of Forestry; Dr. L. R. Dice, professor of Zoology, University of Michigan; Dr. A. G. Vestal, professor of botany and zoology, Stanford University; Dr. Ned Dearborn, formerly of the Biological Survey, now operating a fur farm in New York State; and Messrs. Headley, Gill and Shipp of the Washington office.



## DISTRICT 5 - CALIFORNIA DISTRICT

The month of July was seriously interrupted for Show, Dunning and Ayres by work on some of the large fires in the State.

Ayres, who was formally transferred to the Tahoe National Forest on July 1, but whose services were promised to assist Dunning, spent really the first half of the month on the Yuba Pass fire and the balance of the month at his home recovering from a severely infected throat.

Dunning arrived on the Tahoe on July 6 to initiate work on the yield study project but from July 9 to July 21st was continuously engaged on the Forest Hill fire.

Show was on the same fire from July 9 to July 20.

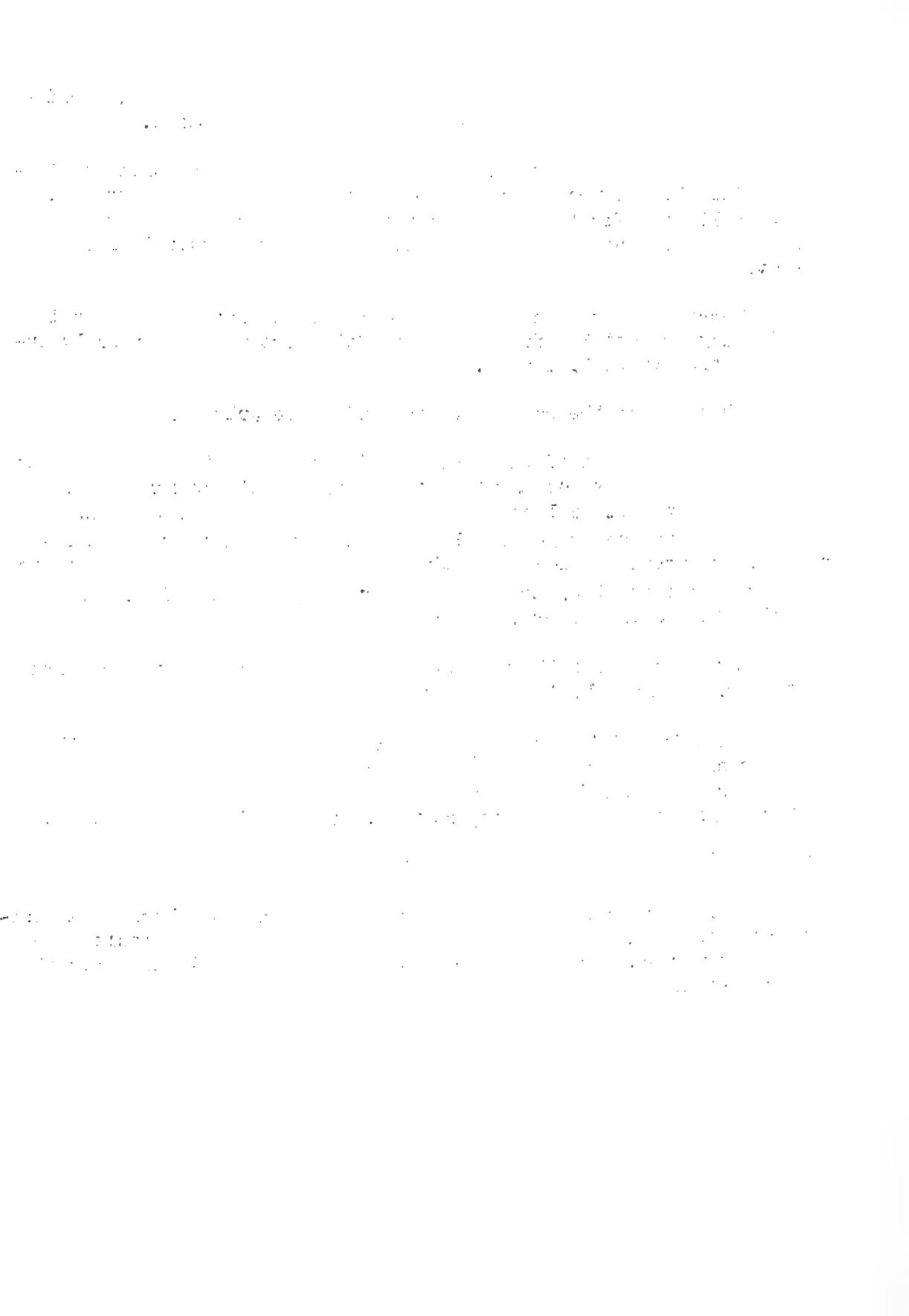
Toward the end of the month Dunning returned to the Tahoe where his work will consist of an attempt to develop methods for applying normal yield tables to large areas of irregularly stocked second growth. The region is peculiarly adapted to this investigation because large areas of second growth timber occur which due to sporadic cutting, light burning, and other factors, represents all stages of stocking that could be found anywhere.

Show during the first and last parts of the month was at work on the agricultural land phase of the economic study.

The volume table party has continued steadily at work on the securing of new measurements. A large mass of data has already been secured and additional assistance will be necessary during the coming winter to analyze this and prepare whatever new tables should be needed.

## LIBRARY

During the past month the library has loaned 986 books and periodicals, and 112 members of the Service and others have consulted the library in person. There were 160 books and articles indexed for the card catalogue.



MANUSCRIPT NEWS NOTES

District 5

The management of forest properties in the California pine region as a problem in applied ecology. S. B. Show. (Ecology)

Forest fires as an ecological factor in the pine forests of California. S. B. Show. (Scientific Monthly)

Appalachian

Growth on cut-over and virgin western yellow pine lands in central Idaho. C. F. Korstian. (Page proof, Jour. Agric. Res.)

On the trail of the vanishing spruce. C. F. Korstian and D. S. Jeffers. (Galley proof, Scientific Monthly)

Washington

Forests and the Weather. E. N. Munns. Yearbook, Dept. Agri., 1923.

Priest River

Fall sowing and delayed germination of western white pine seed. W. G. Wahlenberg (Page proof. Jour. Agric. Res.)

Factors influencing the establishment of Engelmann spruce. W. C. Lowdermilk. (Jour. Agric. Research)

Some factors affecting reproduction after logging in northern Idaho. J. A. Larsen. (Galley proof, Jour. Agric. Res.)

In Print

Zon, R. Research Problems in Forestry in the Lake Region. Michigan Alumnus, May 15, 1924.

Haasis, F. W. Consistent accuracy in sample plot computations. Jour. Forestry, May, 1924.

Krauch, Herman. Comparison of taper and caliper measurements. Jour. Forestry, May, 1924.

Bates, C. G. The erosion problem. Jour. Forestry, May, 1924.

Committee Report - A step towards unification of yield studies. Jour. Forestry, May, 1924.

Larsen, J. A. Dust storms of Northern Idaho and Western Montana. Jour. Forestry, May, 1924.



Wahlenberg, W. C. Circumventing delayed germination in the nursery.  
Jour. Forestry, May, 1924.

Meyer, W. H. Modern hypsometers. Jour. Forestry, May, 1924.

Larsen, J. A. Trend of Silviculture Development in Germany.  
Jour. Forestry, May, 1924.

Pearson, G. A. Temperature summations with reference to plant life.  
Monthly Weather Review. April, 1924.

Larsen, J. A. Why hardwoods do not grow naturally in the west.  
Monthly Weather Review, April, 1924. (From Idaho Forester,  
1922 annual.)

Korstian, C. F. Natural regeneration of southern white cedar.  
Ecology, April, 1924.

Zon, Raphael. Forestry as a part of land utilization.  
Proceedings of Tri-State Development Congress, Jan. 24, 1924.

Pearson, G. A. Some conditions for effective research. Science,  
July, 1924.

Peirson, H. B. Estimating forest insect damage and progress report  
on other forest insect studies. Bulletin No. 3, Maine Forest  
Service. 1924.

